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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,262	09/06/2005	Eiji Ichihara	Q86135	9895

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EXAMINER

VERBITSKY, GAIL KAPLAN

ART UNIT	PAPER NUMBER
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2859

MAIL DATE	DELIVERY MODE
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09/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/524,262

Applicant(s)

ICHIHARA ET AL.

Examiner

Gail Verbitsky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6 and 11-13 is/are rejected.
- 7) ☒ Claim(s) 7-10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 07/03/07.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-6 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/17806A1 [hereinafter WO] in view of Aubel et al. (U.S. 6921197) [hereinafter Aubel].

WO suggests to monitor a flat/ deflated tire and teaches to position a temperature sensor in each tire and monitor an atmospheric temperature and rate of change of temperature in each tire and compare it with a predetermined value (previously determined rate of change of temperature/ previously set limit) in order to determine flat tire. WO determines first time temperature derivative and second derivative. WO suggests reinforcing the tires. WO states that it is important for a driver, when it drives a car with a deflated tire to know if can drive more and how long rather than staying on a side road and repairing the tire.

Although, this might imply that the driver wants to know the end life of the tire as function of the temperature. WO does not explicitly state that the predetermined data is a previously obtained data stored in the memory.

Aubel discloses the device in the field of applicant's endeavor. Aubel teaches To embed a temperature sensor in a tire and evaluate the tire condition with respect to runnable time and integral of output temperature signal, the integral is indicative a wear signal, wherein

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when the integral is exceeding a threshold level, the device indicates a wear (residual lifetime is judged) signal for the tire. This can indicate a flat tire, and a pressure control turns an air pump.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device/ method disclosed by WO so as to clearly judge the residual life of the tire with respect to the flat tire, as taught by Aubel, in order to allow the operator to know for how long he/ she can run the tire/ vehicle.

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/17806A1 [hereinafter WO] and Aubel, as applied to claims 1-2, 4-6 and 12-13 above, and further in view of Tanaka Masatoshi (U.S. 6701986).

WO and Abel disclose the device/ method as stated above.

They do not teach to reinforce tire with a reinforcing rubber.

Masatoshi Tanaka states that it is very well known in the art to reinforce tires with rubber layer in order to prolong their life.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the tire, disclosed by WO and Abel, with reinforcing rubber, as taught by Masatoshi Tanaka, in order to prolong the tire life and provide the operator with the tire behavior when it is reinforced, in order to predict life of already reinforced tire.

4. Claims 1-2, 4-6, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/17806A1 [hereinafter WO] in view of Nowicki et al. (U.S. 5945908) [hereinafter Nowicki].

WO suggests to monitor a flat/ deflated tire and teaches to position a temperature sensor in each tire and monitor an atmospheric temperature and rate of change of temperature in each tire

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and compare it with a predetermined value (previously determined rate of change of temperature) in order to determine flat tire. WO determines first time temperature derivative and second derivative. WO suggests reinforcing the tires. WO states that it is important for a driver, when it drives a car with a deflated tire to know if can drive more and how long rather than staying on a side road and repairing the tire. This would imply that the driver wants to know the end life of the tire as function of the temperature.

WO does not explicitly teach the newly added limitations of claim 1, with the remaining limitations of claims 1-2, 4-6, 12-13.

Nowicki discloses a device/ method in the field of applicant's endeavor. Nowicki states that expected tire life (end stage) is calculated based on a tire temperature and pressure. Tire degradation/ wear information is stored in a memory in a computer. The computer has a program for calculating accumulation of degradation of the tire and calculation of the expected life/ end stage. The parameters are compared against previously stored parameters. If they exceed a limit, the operator is being notified (entire col. 8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device/ method disclosed by WO so as to clearly judge the residual life of the tire with respect to the flat tire, as taught by Nowicki, in order to allow the operator to know for how long he/ she can run the tire/ vehicle.

Allowable Subject matter

5. Claims 7-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments, filed 07/03/2007, with respect to claims have been fully considered and are persuasive. Therefore the previous rejection has been withdrawn.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Aubel et al. (U.S. 6921197) disclose a device/ method/ process of judging in the field of applicant's endeavor comprising detection units arranged in each tire capable of measuring temperature of the tire and determining with respect to time (integrating) when the wear (residual lifetime) or the tire exceeds a threshold (statistically set temperature or the temperature set from the test stand), wherein the tire pressure control decides to inflate the tire (thus, deciding that the tire is flat which is judged based on the measured temperature). The measured temperature is a temperature inside the tire. The device also predicts the wear (time). Aubel states that the sides of the tire are more likely susceptible to wear. Also the tire damage can be detected (entire col. 5). Aubel states that the too high temperature can be indication of too low pressure (flat tire). For claims 12-13: the device has an evaluation unit/ microprocessor/ computer comprising a storage device/ memory (col. 6, lines 20-28, col. 7, lines 35-37).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gail Verbitsky whose telephone number is 571/ 272-2253. The examiner can normally be reached on 7:30 to 4:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571/ 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GKV

Gail Verbitsky



Primary Patent Examiner, TC 2800

September 07, 2007